STATE OF NEW HAMPSHIRE
DEPARTMENT of RESOURCES and ECONOMIC DEVELOPMENT
DIVISION OF FORESTS AND LANDS
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John E. Sargent, Director

STEPHEN K. RICE
Commissioner

603-271-2214
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December 11, 1991

James Linnane
USFS, NA-S&PF, FHP
Post Office Box 640
Durham, NH 03824

Dear Jim:

Enclosed is New Hampshire's Forest Pest Conditions Report for 1991.

This year, the most significant and positive effects on New Hampshire's overall forest insect and disease program was the assistance provided by the Forest Health Protection program supplemental funding. First, 3,300,000 detection acres were achieved over and above the initial target acres estimated under the CPAP funds. Secondly, these funds permitted me to reemploy my present Technician, Jennifer Bofinger, whom I had lost ten (10) months previously due to a reduction-in Force Executive Order.

Hemlock Looper - continues to expand. In our first year of reported defoliation only three (3) areas appeared to be affected with a total of 308 acres of heavy defoliation. In 1991, we found 24 distinct areas of Looper defoliation, totalling 2,800 acres of moderate and/or heavy defoliation. Based on an apparent difference in feeding behavior, we believe we are dealing with Lambdina athasaria.

Gypsy Moth - defoliation continued to rise from 380 acres in 1987 to 211,500 in 1991. Our survey procedures during those years have remained the same: 1) aerial survey; 2) ground checks to determine cause; 3) pheromone trapping at 73-75 sites systematically distributed throughout southern New Hampshire south of the White Mountain National Forest; 4) 5 minute walk egg mass counts at each trap site; and 5) egg mass per acre counts at selected areas of light, moderate and heavy defoliation. In areas of special concern, egg masses have been collected and a percent hatch adjustment has also been made. Recently, we added the Moore and Jones formula to estimate number of eggs per mass. Our purpose has been to estimate population levels and predict next year's potential defoliation trend. Thus leaving biological

evaluations, as done in the past, only in those areas of specific landowner concerns. Preliminary analysis of trap site egg mass per acre counts and the subsequent acres of total defoliation appear to have a very close relationship over the last six (6) years of data. We plan to continue our usual surveys and refine this relationship through the balance of the present outbreak cycle.

Hemlock Woolly Adelgid - continues to be absent from New Hampshire's woodlands and commercial nursery stock. By the 1992 spring, we will be increasing the number of permanent observation plots from the present 31 to 61 with the assistance of the County Foresters in Extension. They will be adding three (3) more observation sites in each of our ten (10) counties. New Hampshire's Plant Industry Division annually inspects the State's commercial nurseries and maintains a special focus on imported nursery stock.

A leading conservation group has begun to rally forest landowners and the public-at-large to a worse case scenario involving the Hemlock Woolly Adelgid and the demise of eastern hemlock in New Hampshire. Although the joint policy of the Division of Forests and Lands and Agriculture's Division of Plant Industry does not support this theory, we have been forced to develop an action plan which will prescribe the means that will be employed at such times when HWA is detected within the state. Through the efforts of the Forest Pest Advisory Group, we are currently working on developing such a policy to present to our respective Commissioners.

Sincerely,

A. C. Avery

Alfred C. Avery
Forest Entomologist

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1991 PEST/DAMAGE CONDITIONS REPORT WORKSHEET

Host Tree(s) (including forest type): Various hardwoods with oak preferred.

Damage/Pest:

Common Name: Gypsy Moth

Scientific Name: Lymantria dispar (Linnaeus)

Survey:

Method(s) Used: Aerial survey with 100% ground check this year
Also included an egg mass survey at the same time using the 5-minute walk method. Pheromone traps were also run this year.

Total Area Surveyed:
Aerial covered about 1,360,560 acres.
Egg mass survey covered about 211,500 acres.
Pheromone traps sample 3,300,000 acres.

Present Condition:

Area (total acres): All classes of defoliation totalled 211,500 acres.of defoliation. Defoliation occurred in 8 of the 10 Counties.

Location (indicate on map):
Two infestations were active for the second year in Shelburne, Coos County, one in Cheshire County.

Severity (include areas of moderate and heavy defoliation or infection; define classes):
Heavy DEF 60-100% was recroded on 139,800 acres.
Moderate DEF 30-60% recorded on 52,000 acres.

Losses (include areas of tree mortality; also volume and/or $ estimates):
None observed.

Trend:

Past to Present: Measures of Gypsy Moth abundance generally increased in 1991 when compared with 1990.

Future: The outlook for 1992 appears unchanged from '91 based on cursory analysis. Average egg mass per acre counts at 73 traps sites almost doubled in 1991 (837 EM/AC) when compared to 1990 (422 EM/AC) but egg mass sizes are smaller for 1992 hatch.

Control Projects (method, material, acres, cost, results):
None planned.

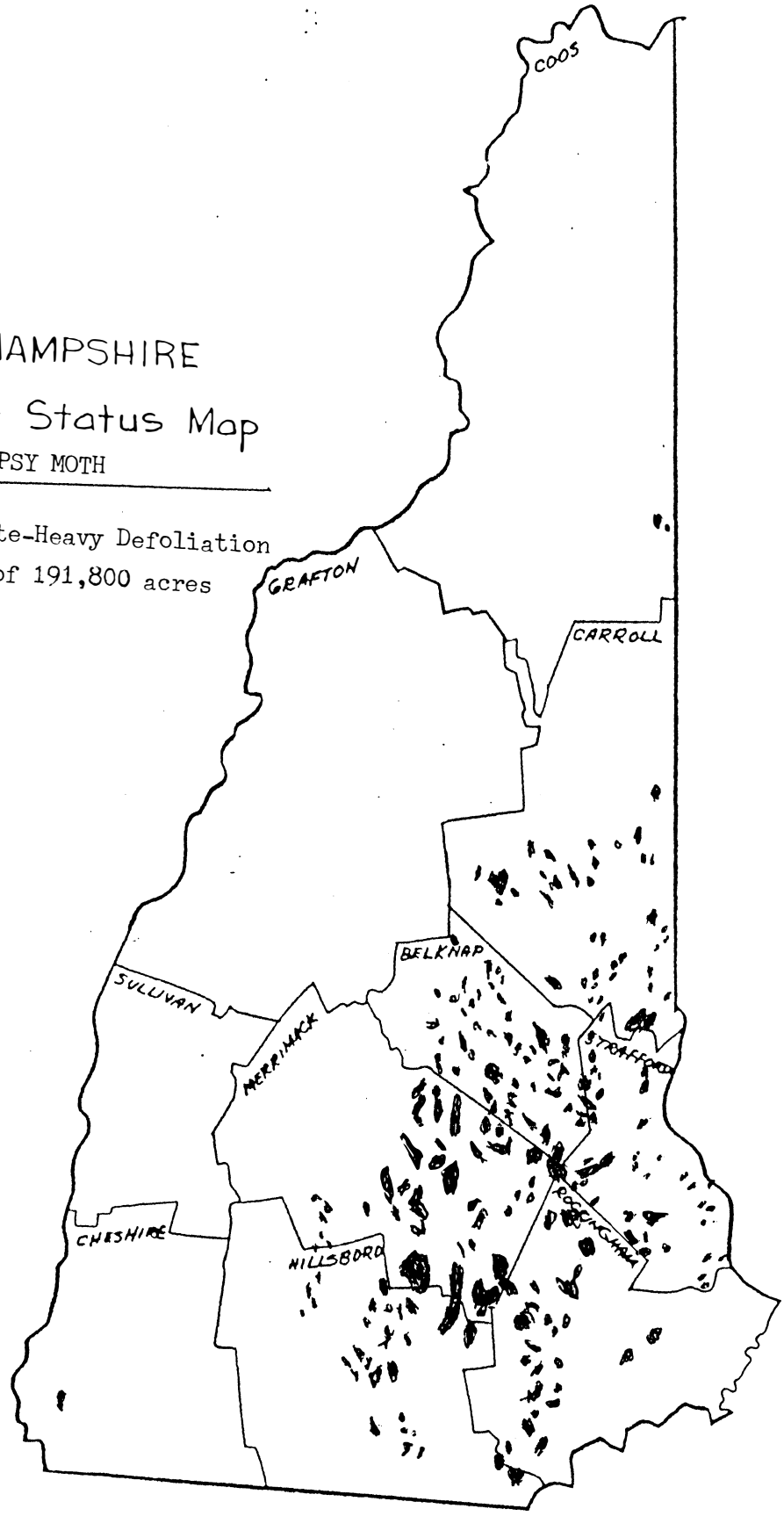
Comments:

NEW HAMPSHIRE

Forest Pest Status Map

Pest: GYPSY MOTH

Moderate-Heavy Defoliation
Total of 191,800 acres



Year: 1991

Prepared by A. C. Avery.

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1991 PEST/DAMAGE CONDITIONS REPORT WORKSHEET

Host Tree(s) (including forest type): Hemlock, Tsuga canadensis (L.) Carr.
Oak/Hickory type

Damage/Pest:

Common Name: Hemlock Looper

Scientific Name: Lambdina athasaria (Walk.) probably

Survey:

Method(s) Used: Aerial and ground (windshield) surveys.

Total Area Surveyed: 287,200 acres in Cheshire County.

Present Condition:

Area (total acres): 2,800 acres of hemlock defoliated all of which is in Cheshire County in SE corner of New Hampshire.

Location (indicate on map):

Severity (include areas of moderate and heavy defoliation or infection; define classes):

Hemlocks with at least the upper crown severely defoliated are considered Moderately defoliated; Upper, middle crown severely defoliated with lower crown light to severely defoliated were considered Heavily defoliated. However, no class distinctions were made at the initial observance.

Losses (include areas of tree mortality; also volume and/or $ estimates):

Trend:

Past to Present: Three areas with a total of 308 acres with heavy looper defoliation was recorded in 1990. The number of defoliation sites in 1991 has jumped to 24; total acres of moderate and heavy defoliation amounted to 2,800 acres. No Hemlock looper defoliation was reported in 1989.

Future: No predictive surveys have been conducted at this time. Efforts are under way to relate tree defoliation and tree mortality.

Control Projects (method, material, acres, cost, results):

None are presently planned.

Comments:

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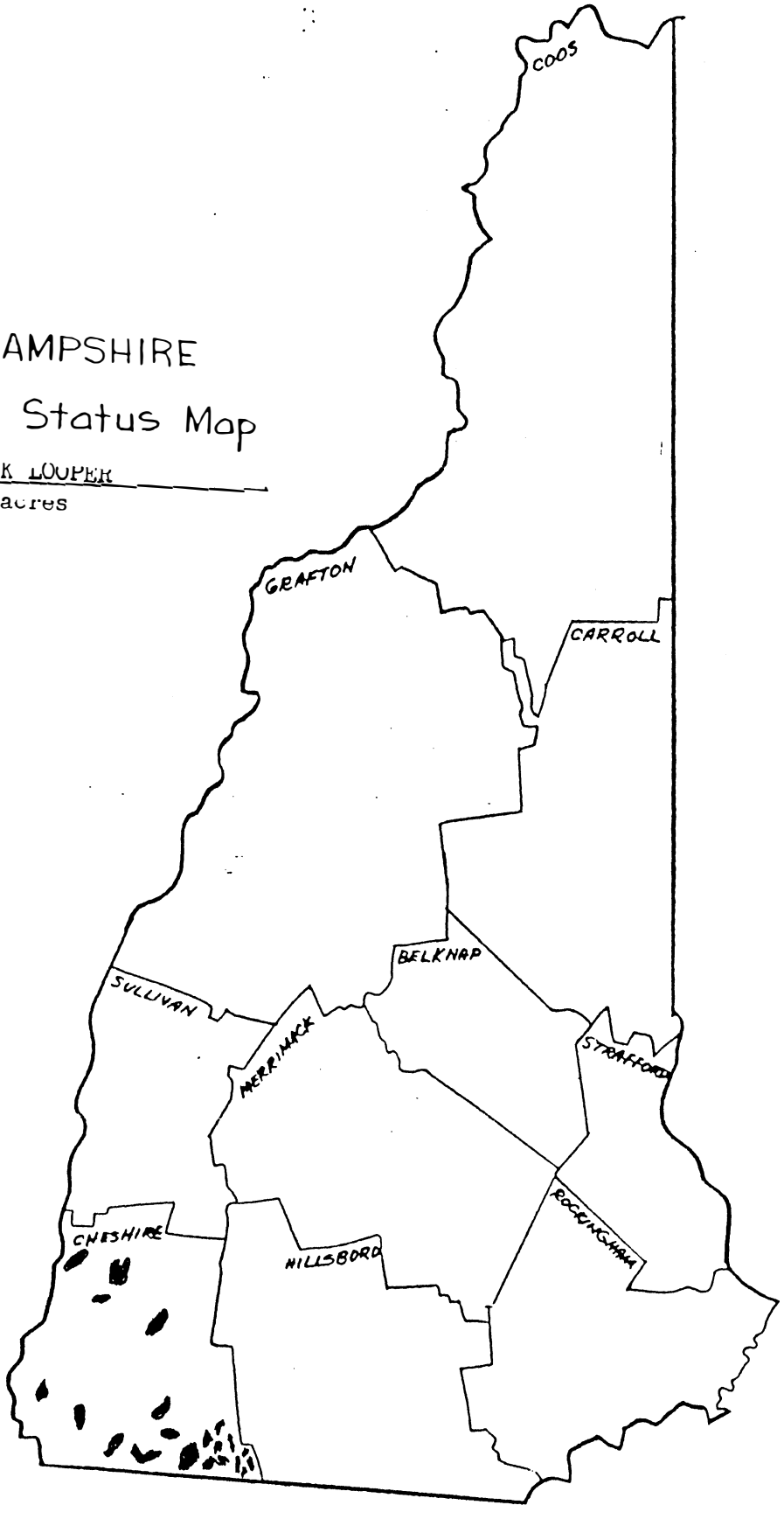
NEW HAMPSHIRE

Forest Pest Status Map

Pest: HEMLOCK LOOPER
2,800 acres



Prepared by Alfred C. Avery.

Year: 1991

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1991 PEST/DAMAGE CONDITIONS REPORT WORKSHEET

Host Tree(s) (including forest type): eastern hemlock. White/Red Pine type.

Damage/Pest:

Common Name: Hemlock Woolly Adelgid

Scientific Name: Adelges tsugae Annand

Survey:

Method(s) Used: 31 permanent plot locations which are examined on an annual basis.

Total Area Surveyed: 162,700 acres involving hemlock stands within 50 miles of the New Hampshire coast line.

Present Condition:

Area (total acres): No evidence of Hemlock Woolly Adelgid has been found to this date.

Location (indicate on map):

Severity (include areas of moderate and heavy defoliation or infection; define classes):

Losses (include areas of tree mortality; also volume and/or $ estimates):

Trend:

Past to Present:

Future: The number of plots is expected to double in 1992 as the County Foresters have agreed assist us by adding two (2) more surveillance plots per county and report their findings to the Division of Forests & Lands on an annual basis.

Control Projects (method, material, acres, cost, results):

None to date. The Society for the Protection of New Hampshire Forests are planning to provide greater publicity for the HWA threat by distributing Pest Alerts at trailheads throughout the state beginning next spring.

Comments: threat

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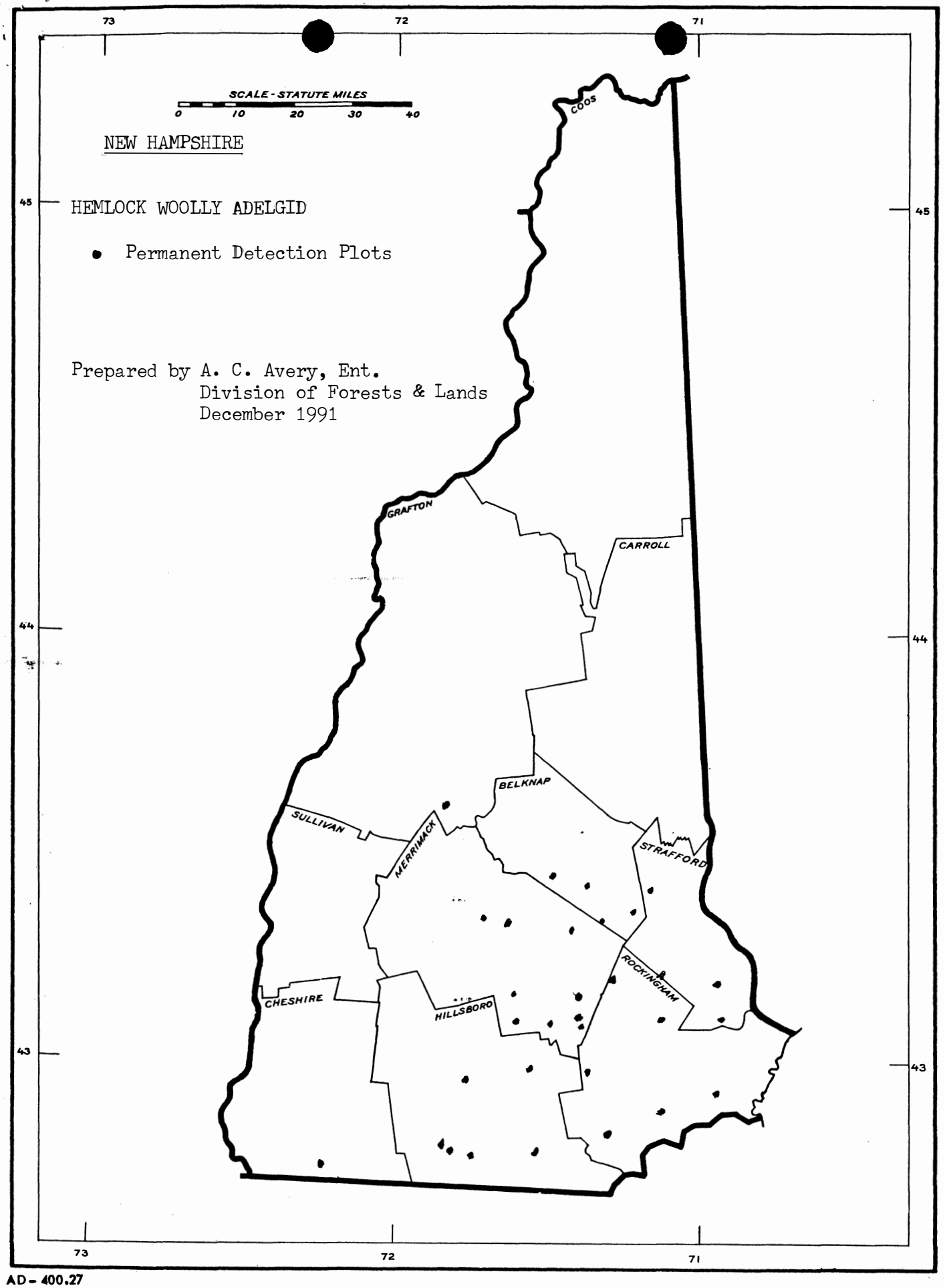

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